

**ALPHABETICAL INDEX
TO THE COMMERCE CONTROL LIST**

This index is not an exhaustive list of controlled items.

Supplement No. 4 to Part 774 – Commerce Control List Order of Review
identifies the steps to follow when reviewing the Commerce Control List.

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| Clostridium perfringens alpha, beta 1, beta 2, epsilon and iota toxins | 1C351.d.5 |
| Clothing & materials, bullet-resistant | 1A005 |
| CNTD (Controlled nucleation thermal decomposition) equipment..... | 2B005.a.1.b |
| Coating application & processing technology, optic fibers | 5E991.a.1 |
| Coating application technology, for non-electronic substrates..... | 2E003.f |
| Coating application & processing technology, optic fibers | 5E001.b.3 |
| Coating equipment for prepgs/preform production | 1B101.d |
| Coating & processing equipment, for non-electronic substrates | 2B005 |
| Coatings for reduced electromagnetic visibility or signature suppression | 1C101, 0C617.a |
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| Coccidioides posadasii..... | 1C351.e.2 |
| Cochliobolus miyabeanus (<i>Helminthosporium oryzae</i>)..... | 1C354.b.2 |
| Cold-cathode tubes..... | 3A228.a |
| Colletotrichum coffeatum var. virulans (<i>Colletotrichum kahawae</i>) | 1C354.b.1 |
| Colletotrichum kahawae (<i>Colletotrichum coffeatum</i> var. virulans) | 1C354.b.1 |
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| Column, liquid-liquid exchange, for lithium amalgams | 1B233.b.1 |
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| Common channel signaling, technology for the development of equipment employing | 5D001.c.5 |
| Communication channel controllers | 5A991.b.4.b |
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| Description | ECCN Citation |
|--|---|
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| Components made from Fluorinated compounds | 1A001 |
| Components/structures for spacecraft..... | 9A010 |
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| Composite or laminate development software..... | 1D002 |
| Composite structures, as tubes | 1A202 |
| Composite structures or laminates | 1A002 |
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| Composite (structural) production equipment controlled by 1B999, software for | 1D999 |
| Composite materials, ceramic-ceramic | 1C007.f |
| Composites production equipment | 1B001 |
| Composite structures for propulsion systems or space vehicles..... | 9A110, 9A619.x |
| Composite structures for unmanned aerial vehicles | 9A610.t |
| Composites (structural) production equipment..... | 1B101 |
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| Compound semiconductor integrated circuits | 3A001.a.11 |
| Compound semiconductor photocathodes | 6A002.a.2.c.3 |
| Compressors..... | 9A619.x |
| Compressors, bellows-sealed scroll-type..... | 2B233 |
| Compressors, turboexpander..... | 1B232 |
| Compressors, turbo/centrifugal/axial flow..... | 9A619.x |
| Computer, electronic assemblies & equipment & components ...4A001, 4A003, 4A004 or 4A994 | |
| Computer, electronic components | 4A101 |
| Computer, electronic components | 4A102 |
| Computers, parts, components, accessories... for military applications, not on USML..... | 3A611 |
| Computer aided design (CAD) equipment for semiconductor devices or integrated circuits | 3B991.b.2.c |
| Computer-aided-design (CAD) software for IC's & semiconductors..... | 3D003 |
| Computer interconnect equipment..... | 4A003.g |
| Computer/assemblies/components, neural..... | 4A004.b |
| Computer/assemblies/components, optical..... | 4A004.c |
| Computers, electronic assemblies, and related equipment and components not controlled by 4A001 or 4A003 | 4A994 |
| Computers, analog & analog ruggedized | 4A101 |
| Computers for fingerprint equipment | 4A980 |
| Computers, digital ruggedized | 4A101 |
| Computers/assemblies/components, systolic array..... | 4A004.a |
| Computers, analog | 4A001 |

| Description | ECCN Citation |
|--|-----------------------|
| Computers, digital | 4A003 |
| Computers, digital | 4A004 |
| Computers, digital..... | 4A001 |
| Computers, hybrid..... | 4A102 |
| Computers, parts, components ... for military application not on USML..... | 4A611/3A611 |
| Computers and electronic assemblies (hybrid), and specially designed components therefor..... | 4A994.k |
| Computers, with extended operating temperature range | 4A001.a.1 |
| Computers, radiation hardened | 4A001.a.2 |
| Concealment and deception equipment (military), i.e. special paints, decoys, smoke or obscuration equipment and simulators..... | 0A617 |
| Concealed object detection equipment | 2A984, 2D984 or 2E984 |
| Condensers for use in nuclear reactors | 2A290.a |
| Condensers or heat exchangers | 2B350.d |
| Conductive polymers | 1C001.c |
| Conductors, superconductive composite | 1C005 |
| Congo-Crimean haemorrhagic fever virus (a.k.a. Crimean-Congo haemorrhagic fever virus) | 1C351.a.9 |
| Connector backshells, electric | 3A611.y.9 |
| Conotoxin | 1C351.d.6 |
| Construction equipment "specially designed" for military use | 0A617.y.1 |
| Contactors | 3A611.y.27 |
| Contagious bovine pleuropneumonia (<i>Mycoplasma mycoides</i> subspecies <i>mycoides</i> SC (small colony)) | 1C351.c.16 |
| Containers, for packing defense articles or "600 series" items | 0A617.y.3 |
| Containers, chemical | 2B350.c |
| Containment devices (not enumerated under ECCN 1B608 or in USML Category IV or V) for the testing of high explosives or explosive devices | 1B234 |
| Containment facilities | 2B352.a |
| Continuous mixers | 1B118 |
| Control units for metallurgical melting & casting furnaces..... | 2B227 |
| Control systems, on-line development of gas turbine engines | 9B002, 9B619.a |
| Controllable-pitch propellers | 8A002.o.2.a |
| Controlled atmosphere melting & casting furnaces..... | 2B227 |
| Controlled environment (vacuum or inert gas) induction furnaces | 2B226 |
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| Controllers, machine tool (CNC) | 1B001.a |
| Controllers for high explosive handling robots | 2B207 |
| Controllers, robot | 2B007 |
| Converter integrated circuits..... | 3A001.a.5 |
| Converters, frequency | 3A225 |

| Description | ECCN Citation |
|--|-------------------|
| Converters, frequency extender | 3A001.b.7 |
| Cooling fluids - electronic | 1C006.d |
| Cooling fluids, fluorocarbon electronic | 1C006.d |
| Cooling systems, freon and chilled water | 1B999.d |
| Copper or phosphor bronze mesh packings | 1A226 |
| Copper metal vapor lasers..... | 6A005.b |
| Coprocessor microcircuits | 3A001.a.3 Note |
| Correlation-velocity sonar log equipment | 6A001.b |
| Counter Improvised Explosive Device equipment | 5A001.h |
| Coxiella burnetii..... | 1C351.c.13 |
| Crime science laboratories, parts and accessories, nonmilitary mobile..... | 9A980 |
| Crimean-Congo haemorrhagic fever virus (a.k.a. Congo-Crimean haemorrhagic fever virus) | 1C351.a.5 |
| Cross-flow filtration equipment..... | 2B352.d |
| Crossed-field amplifier tubes..... | 3A001.b.1.b |
| Crucibles, liquid actinide resistant..... | 2A225 |
| Crucibles, tantalum | 2A225.b or c |
| Crude petroleum or shale oil..... | 1C981 |
| Cryocoolers for optical sensors, space qualified..... | 6A002.d.1 |
| Cryocoolers for optical sensors, non-space qualified | 6A002.d.2 |
| Cryogenic and superconductive equipment, parts, components, accessories | 9A620 |
| Cryogenic and superconductive test equipment | 9B620 |
| Cryogenic and superconductive software | 9D620 |
| Cryogenic and superconductive technology | 9E620 |
| Cryptanalytic equipment or devices, digital | 5A002.a.2 |
| Cryptoanalytic equipment and components, n.e.s. | 5A992 |
| “Cryptographic activation” equipment | 5A002.j |
| Cryptographic enabling systems, equipment, integrated circuits, etc..... | 5A002.b |
| Cryptographic enabling software | 5D002.d |
| Cryptographic enabling technology | 5E002.b |
| Cryptographic equipment and components, n.e.s. | 5A992 |
| Cryptography equipment or devices, digital | 5A002.a.1 |
| Cryptography equipment or devices, analog | 5A002.a.3 |
| Cryptologic equipment, software for the development, production or use of | 5D992 |
| Cryptologic equipment and components, n.e.s. | 5A992 |
| Cryptologic equipment, technology for the development, production or use of | 5E992 |
| Crystal pullers and furnaces..... | 3B991.b.1.c |
| CTPB (Carboxy-terminated polybutadiene) | 1C111.b.1 |
| Custom integrated circuits | 3A001.a.2 or a.10 |
| Cutting tool inserts, single diamond point | 2B998.b |
| Cutting machines, gears | 2B003 |
| Cutting equipment for preprints/preform production | 1B101.d |

| Description | ECCN Citation |
|---|--------------------------------|
| CVD (Chemical vapor deposition) equipment | 1B001.d.2 |
| CVD (Chemical vapor deposition) equipment | 2B005.a |
| CVD (Chemical vapor deposition) equipment | 1B101.c.2 |
| CVD (Chemical vapor deposition) furnaces, other than those controlled by 2B005.a, designed or modified for the densification of carbon-carbon composites | 2B105 |
| CW (Chemical warfare) precursors | 1C350 |
| Cyanogen chloride (506-77-4) | 1C355.b.1.b, 1E355.b.2 |
| Cylinder wall lubrication technology, diesel engines | 9E003.e.3 |
| DACs (Digital-to-analog converters)..... | 3A001.a.5 |
| DBRN (Data Based Referenced Navigation) system technology..... | 7E004.a.7 |
| Damping, flotation or lubricating fluids | 1C006.c |
| Data acquisition systems for gas turbine engine development | 9B002, 9B619.a |
| Data (message) switching equipment, systems, components and assemblies | 5A991.c.1 |
| Data acquisition equipment for wind tunnels, automatic..... | 9B005 |
| Data Based Referenced Navigation (DBRN) systems for underwater navigation, technology | 7E004.a.7 |
| Datagram packet routing or switching equipment | 5A991.c.3 |
| Decanters, centrifugal | 2B352.c |
| Decontamination equipment | 1A004 or 1A995 |
| Deep-hole drilling machines | 2B001.f |
| Defect, error or contaminant detection equipment for wafers or substrates | 3B992.b.1 |
| Deformable mirrors..... | 6A004.a.1 |
| Degassing equipment | 2B350 |
| DEGDN (diethylene glycol dinitrate)..... | 1C111.c.5 |
| Demolition blocks..... | 0A604.a |
| Dengue fever virus | 1C351.a.10 |
| Depleted Uranium..... | 1A290 |
| Depth sounders..... | 6A001.a.1 |
| Design integration of guidance sets, software | 7D103 |
| Detection and protection equipment and components | 1A004, 1A995, 2B351 or 2B352 |
| Detection equipment, seismic | 6A999.a |
| Detection equipment, radiation | 1A004, 1A995 or 1A999.a |
| Detection equipment, radiographic | 1A999.b |
| Detection systems for explosives and detonators | 1A004.d, 2A983, 2D983 or 2E983 |
| Detection or location systems or transmitting and receiving arrays (acoustic) | 6A001.a.1.b |
| Detectors, optical | 6A002.a |
| Detectors, radiation hardened | 6A102 |
| Detectors, space-qualified solid state optical..... | 6A002.a.1 |
| Detonation cord..... | 1A008 or 1C992.c |
| Detonator detection | 2A983, 2D983 or 2E983 |
| Detonators and multipoint initiation systems | 3A229 |
| Detonator firing sets, for multiple detonators of 3A232..... | 1A007 or 3A229 |

| Description | ECCN Citation |
|--|--------------------|
| Detonators, electric or non-electric..... | 1C608.d or 1C992.e |
| Detonators, exploding bridge wire (EBW) | 1A007 |
| Detonators, exploding bridge (EB) | 1A007 |
| Detonators, exploding foil initiators (EB) | 1A007 |
| Detonators for military explosives..... | 0A604 |
| Detonators, slapper (electric)..... | 1A007 |
| Deuterium fluoride-carbon dioxide (DF-CO2) lasers..... | 6A005.d.5 |
| Deuterium fluoride (DF) lasers..... | 6A005.d.5 |
| Di-isopropylamine | 1C350.d.4 |
| Diacetoxyscirpenol toxin | 1C351.d.7 |
| Dials, indicator | 3A611.y.26 |
| Dialkyl (Me, Et, n-Pr or i-Pr) N,N-dialkyl (Me, Et, n-Pr, or i-Pr)-phosphoramides .. | 1C355.a.2.c |
| Diamond cutting tool inserts, single point | 2B998.b |
| Diamond film substrate development/production technology | 3E003.d |
| Diaphragms, made from fluoroelastomers..... | 1A001.c |
| Diaphragm valves | 2B350.g |
| Dibromotetrafluoroethane based damping or flotation fluids..... | 1C006.c.1 |
| Die bonder, stored program controlled | 3B991.b.3.a |
| Diesel engines for submarines | 8A620.d |
| Diesel engines, nonmagnetic | 8A609.b |
| Diesel engines (air-cooled) and engine blocks for armored vehicles..... | 0A606.c |
| Dies, bellows-forming..... | 2B228.c |
| Diesel engines, n.e.s..... | 9A990 |
| Diesel cycle engine, air independent | 8A002.j |
| Diethyl ethylphosphonate | 1C350.b.3 |
| Diethyl methylphosphonite | 1C350.b.4 |
| Diethyl phosphite | 1C350.c.1 |
| Diethyl-N, N-dimethylphosphoramidate | 1C350.b.5 |
| Diethylaminoethanol..... | 1C350.d.3 |
| Diethylene glycol dinitrate (DEGDN) | 1C111.c.5 |
| Diffusion bonding technology, metal working | 2E003.b.1.b |
| Diffusion bonding technology/data, super alloys or Ti alloys | 2E003.b.2.b |
| Diffusion bonding tools, dies, molds or fixtures..... | 1B003 |
| Digital array processors | 3A001.a.3 Note |
| Digital computers..... | 4A003 |
| Digital computers..... | 4A994.b |
| Digital computers, electronic assemblies & related equipment..... | 4A003 |
| Digital computers, electronic assemblies & related equipment..... | 4A001 |
| Digital computers, logic processors | 4A003 |
| Digital computers, ruggedized | 4A101 |
| Digital computers, signal processing | 4A003 |
| Digital computers, vector processors | 4A003 |

| Description | ECCN Citation |
|---|----------------|
| Digital computer electronic assemblies, parallel processing | 4A003.c |
| Digital computer systems | 4A004 |
| Digital computer systems | 4A003.c |
| Digital computer systems | 4A003.b |
| Digital computer systems..... | 4A001 |
| Digital coprocessors..... | 3A001.a.3 Note |
| Digital differential analyzer, ruggedized | 4A101 |
| Digital electronic control software for propulsion systems, aerospace test facilities or air breathing aero-engine test facilities..... | 9D003, 9D619 |
| Digital exchanges, telecommunication | 5A991.c |
| Digital instrumentation data recorders..... | 3A002.a.6 |
| Digital signal processors | 4A003 |
| Digital time delay generators | 3A999.e1 |
| Digital-to-analog converter integrated circuits (DACs) | 3A001.a.5 |
| Digitally controlled radio receivers | 5A001.b.5 |
| Digitizers, waveform..... | 3A002a.5 |
| Dimensional inspection or measuring systems or equipment not controlled by 2B006..... | 2B996 |
| Dimensional inspection machines..... | 2B206 |
| Dimensional inspection equipment/systems | 2B006.a |
| Dimensional inspection equipment/systems | 2B006.c |
| Dimensional measuring equipment, instruments/systems | 2B006.b |
| Dimethyl ethylphosphonate | 1C350.b.10 |
| Dimethyl methylphosphonate | 1C350.b.11 |
| Dimethyl phosphite | 1C350.c.2 |
| Dimethylamine | 1C350.d.5 |
| Dimethylamine hydrochloride | 1C350.d.6 |
| Dinitrogen tetroxide () | 1C111.a.3.b |
| Dinitrogen trioxide..... | 1C111.a.3.a |
| Dinitrogen pentoxide | 1C111.a.3.c |
| 2,2' Dinitropropanol | 1C018 |
| Diodes, laser..... | 6A005.d.1 |
| Diortho tolyl-urethane..... | 1C018.g |
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| Direct view imaging equipment..... | 6A002.c |
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| Direct Digital Synthesizer (DDS) integrated circuits | 3A001.a.13 |
| Direction finding equipment & components, surveillance | 5A001.e |
| Direction finding equipment, parts & components, navigation, not controlled under 7A003 or 7A103 | 7A994 |
| Direction finding systems, equipment & components, navigation (inertial) | 7A003 |

| Description | ECCN Citation |
|---|------------------|
| Direction finding systems, equipment & components, navigation, not controlled under 7A003 | 7A103 |
| Directional solidification casting control software | 9D004.c |
| Directional solidification casting equipment | 9B001.a, 9B619.a |
| Discharge type arms..... | 0A985 |
| Discrete microwave transistors | 3A611.d |
| Discrete microwave transistor technology | 3E611.b.4 |
| Disk drive (magnetic hard) development or production technology | 4E993.c |
| Display, 3D (software for) | 7D004.g |
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| Distillation columns | 2B350.e |
| Distillation columns, hydrogen-cryogenic | 1B228 |
| Distillation towers, packings | 1A226 |
| Dive computers | 8A992.j |
| Diver deterrent acoustic systems | 8A002.r |
| DNAN (2,4-dinitroanisole) (CAS 119-27-7).....Annex to Cat 1 "List of Explosives" 44 | |
| Dobrava-Belgrade virus | 1C351.a.11 |
| Doppler laser interferometers (DLIs)..... | 6A225 |
| Double seal valves | 2B350.g |
| Drilling equipment | 2B999.h |
| Drilling machines, deep-hole | 2B001.f |
| Drone (military) production facilities | 9B610.c |
| Dry etching equipment, anisotropic plasma..... | 3B001.c |
| Dye lasers..... | 6A005.c |
| Dye lasers..... | 6A205 |
| Dynamic adaptive routing equipment | 5A991.c.9 |
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| Dynamic adaptive routing software | 5D991.a |
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| Eastern equine encephalitis virus..... | 1C351.a.12 |
| EB-PVD (Electron beam physical vapor deposition) equipment | 2B005.c |
| Ebola virus | 1C351.a.13 |
| Eddy current test equipment for nuclear reactors | 2A291.d |
| EDMs, non-wire feed types | 2B001.d |
| EDMs, wire feed type | 2B991d.1 |
| Ejection seat mounted survival aids for military aircraft..... | 9A610.y.6 |
| Electric cattle prods..... | 0A985 |
| Electric detonators, explosive | 3A232a |
| Electric fans | 3A611.y.2 |
| Electric propulsion engines..... | 8A002o.2.b |
| Electrical contacts | 3A611.y.19 |

| Description | ECCN Citation |
|---|---------------|
| Electrical discharge machines, non wire feed (CNC) | 2B001.d |
| Electrical discharge machines (EDM) of the wire feed type | 2B991.d.2 |
| Electrical guide pins..... | 3A611.y.20 |
| Electrically driven explosive detonators | 3A232.a |
| Electro-optic materials | 6C004 |
| Electro-optical device manufacturing equipment and systems..... | 3B991.b Note |
| Electro-optical integrated circuits | 3A001.a.6 |
| Electrolysis cells, amalgam lithium isotope separation | 1B233.b.3 |
| Electrolytic cells for fluorine production | 1B225 |
| Electrolytic cells for fluorine production not controlled by 1B225 | 1B999.a |
| Electromagnetic interference (EMI) protection technology | 7E102 |
| Electromagnetic isotope separators..... | 1B226 |
| Electromagnetic pulse (EMP) protection, detectors | 6A102 |
| Electromagnetic pulse (EMP) protection technology, avionics..... | 7E102 |
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| Electromagnets, superconductive | 3A201.b |
| Electromagnets, superconductive | 3A001.e.3 |
| Electron beam cutting machines (CNC) | 2B001.e.1.b |
| Electron beam equipment for mask making/semiconductor devices..... | 3B001.f.2 |
| Electron beam equipment for projection image transfer..... | 3B991.b.2.g |
| Electron beam melting furnaces..... | 2B227.b |
| Electron beam physical vapor deposition (EB-PVD) equipment | 2B005.c |
| Electron beam sensitive resist materials | 3C002.b |
| Electron beam systems, for probing semiconductor devices | 3B992.b.5 |
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| Electron beam test systems | 3B992.b.5 |
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| Electron tube manufacturing equipment and components..... | 3B991.a |
| Electron tube inspection or testing equipment and components..... | 3B992.a |
| Electronic assemblies..... | 4A003 |
| Electronic assemblies and related equipment not controlled by 4A001 or 4A003 | 4A994 |
| Electronic assemblies specially designed to provide feedback capability in systems controlled by 2B006.b.1.c | 2B006.b.1.d |
| Electronic cameras | 6A003.a.5 |
| Electric chairs..... | 0A981 |
| Electronic components | 3A001 |
| Electronic components | 3A201 |
| Electronic components | 3A101 |

| Description | ECCN Citation |
|---|--------------------------------------|
| Electronic components (military) | 3A611 |
| Electronic components and materials inspection or testing equipment, components and accessories | 3B992 |
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| Electronic components and materials manufacturing equipment, not controlled by 3B001 | 3C001 |
| Electronic computers | 4A994.a |
| Electronic computers & related equipment..... | 4A001, 4A003, 4A004 or 4A994 |
| Electronic computers & related equipment..... | 4A101 |
| Electronic computers & related equipment..... | 4A102 |
| Electronic cooling fluids | 1C006.d |
| Electronic framing cameras | 6A203.b.2 |
| Electron sensing devices | 6A002.a.2.a.2.b |
| Electronic streak cameras & streak tubes | 6A003.a.3 |
| Electronic streak cameras & streak tubes | 6A203.b.1 |
| Electrical connectors | 3A611.y.1 |
| Electronically steerable antennae, phased array | 5A001.d |
| Electroplating equipment | 2B999.i |
| EMP/EMI protection technology, avionic systems | 7E102 |
| Encoders, rotary input shaft type | 3A001.f |
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| Encryption hardware components..... | Cat 5 pt 2 Note 3 (b) |
| Encryption software..... | 5D002 |
| End effectors, robot..... | 2B207 |
| End effectors, robot..... | 2B007 |
| Energetic ionic materials..... | Annex to Cat 1 List of Explosives 48 |
| Energy storage capacitors | 3A001.e.2 |
| Engines, diesel n.e.s..... | 9A990 |
| Engines (marine), n.e.s..... | 8A992.g |
| Engines (submarine), n.e.s..... | 8A992.g |
| Engines (air breathing reciprocating or rotary internal combustion type) | 9A012.b.4 |
| Enterohaemorrhagic E. coli (EHEC) | 1C351.c.17 |
| Environmental chambers | 1B018.b, 9B106.b, or 9B610.b |
| Environmental chambers, capable of simulating flight conditions..... | 9B106.a, 9B610.b |
| Epitaxial growth equipment..... | 3B001.a |
| Epitaxial growth stored program controlled equipment | 3B991.b.1.d |
| Epitaxial wafers, Cadmium telluride (CdTe)..... | 6C002.b |
| Epoxy resin matrix impregnated carbon fibers or filamentary materials | 1C010.e Note 1 |
| Equine morbillivirus (Hendra virus) | 1C351.a.18 |
| Erbium oxide (erbia) (Er_2O_3) made/coated crucibles | 2A225.a.4 |
| Etching stored program controlled equipment..... | 3B991.b.1.h |
| Ethers, as lubricating fluid | 1C006.b.1 |

| Description | ECCN Citation |
|---|-----------------------|
| 0-ethyl-2-diisopropylaminoethyl methylphosphonite (QL) | 1C350.a.1 |
| Ethyl centralites | 1C018.a |
| Ethyl phenyl urethane | 1C018.e |
| Ethyl phosphinyl dichloride | 1C350.b.12 |
| Ethyl phosphinyl difluoride | 1C350.b.13 |
| Ethyl phosphorous dichloride..... | 1C350.b.12 |
| Ethyl phosphorous difluoride | 1C350.b.13 |
| Ethyl phosphonyl dichloride | 1C350.b.14 |
| Ethyl phosphonyl difluoride | 1C350.a.2 |
| Ethyl-NN-diphenylurea (ethyl unsymmetrical diphenylurea) | 1C018.d |
| Ethyldiethanolamine (139-87-7) | 1C350.c.12 |
| Evaporators for concentrated lithium hydroxide solution | 1B233.b.4 |
| Exchange columns, liquid-liquid for lithium amalgams..... | 1B233.b.1 |
| Exchanges, telecommunication..... | 5A991.c |
| Excimer lasers | 6A005.d.4 |
| Execution of human beings, equipment for | 0A981 |
| Expert systems - integration systems technology | 2E003.e |
| Exploding foil initiators (EFI) | 1A007 |
| Exploding bridge (EB) detonators | 1A007 |
| Exploding bridge wire (EBW) detonators | 1A007 |
| Explosive, high | 1C239 |
| Explosive/munitions environment handling robots | 2B007.b |
| Explosive detection | 1A004.d |
| Explosive detonator firing sets..... | 1A007.a |
| Explosives or detonator detection equipment, software, or technology | 2A983, 2D983 or 2E983 |
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| Description | ECCN Citation |
|---|----------------|
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| Description | ECCN Citation |
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| IMU stable element handling fixture | 7B003 or 7B101 |
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| Description | ECCN Citation |
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| Inorganic overlay coating application technology | 2E003.f |
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| Description | ECCN Citation |
|--|------------------|
| Inspection equipment (linear-angular for hemishells) | 2B006.c |
| Inspection equipment for composite materials | 1B001.f |
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| Integrated circuits, custom | 3A001.a.10 |
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| Description | ECCN Citation |
|---|---------------|
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| Ion beam system, manufacturing, repairing, physical layout analysis and testing of masks or semiconductor devices | 3B992.b.6 |
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| Ion implantation production equipment | 2B005.b |
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| Isolators capable of use with biological agents | 2B352.f.2 |
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| Isostatic presses, hot | 2B204 |
| Isostatic presses, hot | 2B004 |
| Isostatic presses, n.e.s. | 2B999.a |
| Isotope separators, electromagnetic | 1B226 |
| Jamming equipment | 5A001.f.3 |
| Japanese encephalitis virus | 1C351.a.21 |
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| Jet vane, thrust vector control sub-systems | 9A106.c |
| Jet engines/components, pulse | 9A111 |
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| Joy sticks | 3A611.y.4 |
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| Description | ECCN Citation |
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| Description | ECCN Citation |
|---|--------------------|
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| Lubricating oil..... | 1C980 |
| Lujo virus | 1C351.a.27 |
| Lumpy skin disease virus | 1C351.a.28 |

| Description | ECCN Citation |
|---|---------------|
| LVDT (Linear voltage displacement transformer) based instruments | 2B006.b.1.b.1 |
| Lymphocytic choriomeningitis virus | 1C351.a.29 |
| Lyssavirus (including rabies virus and all other members of the Lyssavirus genus) | 1C351.a.41 |
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| Machine tools, laser | 2B001.e.1.c |
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| Machine tools, numerically controlled | 2B201 |
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| Description | ECCN Citation |
|---|----------------|
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| Manipulators, for submersibles | 8A002.i |
| Manned, tethered submersible vehicles | 8A001.a |
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| Naval Petroleum Reserves | 1C984 |
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| Mask or reticles or pellicles, stored program controlled inspection equipment | 3B991.b.2.e |
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| Description | ECCN Citation |
|--|-------------------|
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| Materials for reduced electromagnetic reflectivity | 1C101 |
| Materials "specially designed" for ground vehicles and related commodities controlled by 0A606 and not elsewhere specified on USML | 0C606 |
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| Metal powder production equipment | 1B102 |

| Description | ECCN Citation |
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| Metal working process tools, die & fixture technology..... | 2E003.b.1 |
| Metal working manufacturing processes technology | 2E003.b |
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| Microelectronic circuits (e.g., integrated circuits and micro-circuits) rated, certified, or otherwise specified or described as meeting or exceeding all the characteristics in 9A515.d and that are “specially designed” for defense articles, “600 series” items, or items controlled by 9A515 | 9A515.d |
| Microelectronic circuits (e.g., integrated circuits and micro-circuits) that are rated, certified, or otherwise specified or described as meeting or exceeding all the characteristics in 9A515.e and that are “specially designed” for defense articles controlled by USML Category XV or items controlled by 9A515 | 9A515.e |
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| Description | ECCN Citation |
|---|--------------------------|
| Microwave "monolithic integrated circuits" (MMIC) power amplifiers..... | 3A611.c |
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| Military vehicle fording kits | 0A606 |
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| Milling machines, (CNC) with two or more coordinated axes | 2B201.a |
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| Mirrors, actively cooled or heat pipe cooled | 6A005.e.1 |
| Mirrors, beam steering | 6A004.a.4 |
| Mirrors, cockpit for military aircraft..... | 9A610.y.15 |
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| Mirrors, optical | 6A004.a |
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| Mixed Oxides of Nitrogen (MON) | 1C111.a.3.d |
| Mixers, batch..... | 1B117 |
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| Description | ECCN Citation |
|---|------------------|
| Mixers, frequency extenders | 3A001.b.7 |
| Mobile communications equipment, assemblies and components | 5A991.g |
| Modeccin toxin | 1C351.d.10 |
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| Description | ECCN Citation |
|--|---------------------------------|
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| Description | ECCN Citation |
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| N,N-Dialkyl (Me, Et, n-Pr or i-Pr) aminoethane-2-ols and corresponding protonated salts | 1C355.a.2.e |
| N,N-Dialkyl (Me, Et, n-Pr or i-Pr) aminoethane-2-thiols and corresponding protonated salts | 1C355.a.2.f |
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| Noise reduction systems for vessels, active | 8A002.o.3.b |
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| Description | ECCN Citation |
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| Oils, distillate fuel..... | 1C980 |
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| On-highway tractors..... | 9A990 |
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| Operating system software for real time processing equipment..... | 4D993.c |
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| Description | ECCN Citation |
|--|------------------|
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| Optical Sensors | 6A992 |
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| Optical switching equipment | 5A991.c.10.c |
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| Description | ECCN Citation |
|--|------------------------|
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| PEK (Polyether ketone) | 1C998 |
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| PEKK (Polyether ketone ketone)..... | 1C998 |
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| Petroleum products produced or derived from Naval Petroleum Reserves | 1C982 |
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| Description | ECCN Citation |
|--|------------------------|
| Phased array antennae (in radar)..... | 5A001.d |
| Phased array antennae..... | 5A991.f |
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| Photographic still cameras, for underwater use | 8A992.b |
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| Physics-based simulation "software" specially designed for the "development" of lithographic, etching or deposition processes | 3D003 |
| Piezoelectric polymer & copolymer, made from vinylidene fluoride materials..... | 1A001.b |
| Piezoelectric sensing elements, hydrophones | 6A001.a.2.a.2.b |
| Pinacolone..... | 1C350.d.11 |
| Pinacolyl alcohol..... | 1C350.b.18 |
| Piping, austenitic stainless steel | 2B999.n |
| Piping, fittings and valves of or lined with stainless steel, copper-nickel alloy or other alloy steel | 2A292 |
| Piping, monel | 2B999.f |
| Piping, multi-walled incorporating a leak detection port..... | 2B350.h |
| Piping, stainless steel | 2B999.g |
| Piping, vacuum | 2B999.k |
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| Plasma dry etching equipment | 3B001.c |
| Plasma-enhanced CVD (PECVD) equipment | 3B991.b.1.i |

| Description | ECCN Citation |
|--|----------------|
| Plasma enhanced or plasma assisted CVD production equipment | 2B005.a.1.c |
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| Platforms, complete | 9A992, 9A610.h |
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| Polyether ketone ether ketone ketone (PEKEKK)..... | 1C998 |
| Polyether ketone (PEK) | 1C998 |
| Polyether ether ketone (PEEK) | 1C998 |
| Polyether ketone ketone (PEKK)..... | 1C998 |
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| Polymeric substances, non-fluorinated | 1C998 |
| Polysilazanes, precursor for silicon nitride | 1C007.e.2 |
| Polythiophene | 1C001.c.3 |
| Porcine enterovirus type 9 (swine vesicular disease virus) | 1C351.a.39 |
| Porcine herpes virus (Aujeszky's disease)..... | 1C351.a.19 |
| Porous nickel metal..... | 1C240 |
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| Portable electric generators..... | 2A994 |
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| Positioning systems, acoustic..... | 6A001.a.1.d |
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| Positioning tables or rate tables | 2B121 |
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| Description | ECCN Citation |
|---|----------------|
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| Potassium bifluoride | 1C350.d.14 |
| Potassium fluoride | 1C350.d.13 |
| Potassium hydrogen fluoride see potassium bifluoride | 1C350.d.14 |
| Potassium titanyl arsenate (KTA) | 6C004.b.1 |
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| Powassan virus..... | 1C351.a.40 |
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| Precision tracking systems, usable for missiles | 6A108.b |
| Precursors for toxic chemical agents | 1C350 |
| Preform production equipment | 1B101.d |
| Preforms, metal coated, for fiber prepregs in 9C110..... | 9C110 |
| Preforms production equipment..... | 1B001 |
| Preforms production equipment, n.e.s. | 1B999.e |
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| Preforms, fibrous or filamentary materials | 9A110 |
| Preforms, metal coated fiber (for propulsion systems) | 9A110 |
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| Prepreg production equipment..... | 1B101.d |
| Prepregs production equipment, n.e.s. | 1B999.e |
| Prepregs production equipment controlled by 1B999, software for | 1D999.b |
| Prepregs, fibrous or filamentary materials | 1C010.e |
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| Prepregs production equipment | 1B001 |
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| Prepregs, fibrous or filamentary materials | 9A110 |
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| Presses, hot isostatic | 2B104 |
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| Presses, hot isostatic n.e.s. | 2B999.a |
| Pressure transducers..... | 2B230 |

| Description | ECCN Citation |
|---|------------------------|
| Pressure regulators, air cylinders, hoses, valves and backpacks..... | 8A992.h |
| Pressure sensors, manganin & quartz | 6A226 |
| Primary cells and secondary cells | 3A001.e.1.a or 3A991.j |
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| Printed circuit boards & populated circuit card assemblies..... | 3A611.g, y.15 |
| Private automatic branch exchanges (PABXs) | 5A991.c |
| Probing (test) systems, semiconductor devices | 3B002.d |
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| Process control hardware/systems designed for power industries controlled by 1B999, software for | 1D999.a |
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| Process control systems for use in nuclear material handling and processing equipment..... | 2A291.a |
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| Processors, digital signal..... | 3A001.a.3 Note |
| Processors, digital signal..... | 4A003 |
| Processors, digital array | 4A003 |
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| Production equipment, reentry vehicles..... | 9B115 |
| Production facilities, rockets/propulsion systems..... | 9B116 |
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| Program proof and validation software for real time processing equipment..... | 4D993 |
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| Projection telescopes, laser diagnostics | 6A005.f.4 |
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| Propellants and constituent materials | 1C111 |
| Propellant (liquid) production equipment and components..... | 1B115 |
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| Propellers and systems used with reciprocating engines for military aircraft | 9A610.y.25 |

| Description | ECCN Citation |
|--|---------------------------|
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| Propeller noise reduction technology..... | 8E002.a |
| Propeller noise reduction software..... | 8D002 |
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| Propulsion systems/components, production equipment..... | 9B115, 9B619 |
| Propulsion systems, rocket..... | 9A005 |
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| Propulsion system components/structures, launch-vehicle..... | 9A010 |
| Propulsion system composite components/structures..... | 9A110, 9A619.x |
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| Propulsion systems, rocket..... | 9A009 |
| Propulsion systems, rocket..... | 9A007 |
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| Protective suits, gloves, shoes..... | 1A004, 1A995 or 2B352.g.1 |
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| Pseudomonas mallei (Burkholderia mallei)..... | 1C351.c.5 |
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| Public Address (PA) systems for submersible vessels | 8A620.y.1 |
| Public Address (PA) systems for surface vessels of war | 8A609.y.1 |
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| Pulse generators, high-speed | 3A230 |
| Pulse jet engines/components | 9A111 |
| Pulse radar cross-section measurement systems & components | 6B008 |
| Pulse shaping networks, high power..... | 3A999.c |
| Pulsed electron accelerators..... | 3A201.c |
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| Pumps, high pressure | 0A998.b.3 |
| Pumps, liquid propellant | 9A106.d |
| Pumps, lithium amalgam | 1B233.b.2 |
| Pumps, mercury or lithium amalgam..... | 1B233.b.2 |
| Pumps, multiple-seal..... | 2B350.i |

| Description | ECCN Citation |
|---|--------------------|
| Pumps, potassium amide in liquid ammonia | 1B230 |
| Pumps, seal-less | 2B350.i |
| Pumps, vacuum | 2B231 |
| Pumps, vacuum | 2B350.i |
| Pumps designed for industrial service | 2B999.j |
| Pumps designed to move molten metals by electromagnetic force | 2A293 |
| Pyrolytic deposition nozzles | 1B116 |
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| Pyrolytically derived materials production technology | 1E104 |
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| Pyrolyzed carbon-carbon materials | 1C102 |
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| Pyrolysis equipment, for rocket nozzles and reentry vehicle nose tips (other than those controlled by 2B004, 2B005.a, 2B104, or 2B105) | 2B117 |
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| Pyrolysis process control equipment, for chemical vapor deposition furnaces, other than those controlled by 2B005.a..... | 2B105 |
| Pyrolysis process control equipment (other than those controlled by 2B004, 2B005.a, 2B104, or 2B105)..... | 2B117 |
| Pyrotechnic articles, dual use..... | 1A984 |
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| QRS11-00100-100/101 Micromachined Angular Rate Sensors..... | 7A994 |
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| Quadrature-amplitude- modulation (QAM) based radio equipment operating above level 16 | 5A991.b.7.b |
| Quadrature-amplitude-modulation (QAM) based radio equipment | 5A991.b.7 |
| Quadrature-amplitude-modulation (QAM) based radio equipment, equipment for the development of | 5B001.b.4.a |
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| Description | ECCN Citation |
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| Quadrature-amplitude-modulation (QAM) based radio equipment, technology for the development of | 5E001.c.4.a |
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| Quartz pressure sensors/transducers | 6A226.b |
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| 3-Quinuclidone | 1C350.d.15 |
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| Radar systems & components | 6A008 |
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| Radar software | 6D003.h |
| Radar systems, employing signal processing | 6A008.h |
| Radial ball bearings | 2A101 |
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| Radiation hardened detectors | 6A002 |
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| Radiation hardened designed (or rated) robots | 2B007.c |
| Radiation hardened electronic computers | 4A001.a.2 |
| Radiation hardened integrated circuits | 3A001.a.1, 9A515.d or 9A515.e |
| Radiation hardened sensors | 6A002 |
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| Radiation hardened TV cameras not specified in 6A203 | 6A999.b |
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| Radionuclides, alpha-emitting, n.e.s. | 1C999.g |
| Radium-226, compounds, mixtures, products or devices | 1C237 |
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| Radomes usable in protecting missiles against nuclear effects | 6A103 |
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| Description | ECCN Citation |
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| Ralstonia solanacearum, race 3, biovar 2..... | 1C354.a.5 |
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| Ramjet engines/components | 9A011 |
| Range gated illumination systems, underwater | 8A002.d.2 |
| Range instrumentation radars | 6A108.b.2 |
| Rankine cycle engine, air independent | 8A002.j.1 |
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| Rate tables, positioning tables, and motion simulators..... | 2B120 |
| Rathayibacter toxicus..... | 1C354.a.6 |
| Reactor vessels, chemical | 2B350.a |
| Read-out integrated circuits (ROICs)..... | 6A990 |
| Real time processing | 2D002.b |
| Real time processing operating systems | 4D993.c |
| Real time processing equipment operating system software | 4D993.c |
| Real time processing proof and validation software..... | 4D993 |
| Rebreathing apparatus specially designed for military use..... | 8A620.f |
| Receivers, microwave test | 3A002.f |
| Receivers, radio..... | 5A001.b.2, 3 or 4 |
| Reciprocating diesel engine & component technology | 9E003.e.1 |
| Reconstructed replication competent forms of the 1918 pandemic influenza virus containing any portion of the coding regions of all eight gene segments | 1C351.b.1 |
| Recording equipment, analog & digital tape recorders | 3A002.a |
| Recovery of source code - software..... | 5D001.c.2 |
| Red dot sights..... | 0A987 |
| Reduced observables analysis software | 1D103 |
| Reentry vehicles & equipment..... | 9A116 |
| Reentry vehicles/components, production equipment | 9B115 |
| Reflectance measuring equipment, absolute..... | 6B004 |
| Reflectivity (electromagnetic) reducing materials..... | 1C101 |
| Reflectometers, mirror characterization..... | 7B102.b |
| Reflectors (mirrors), optical..... | 6A004.a.1 |
| Reflex sights..... | 0A987 |
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| Reinforcement fiber, production equipment | 1B001.d |
| Release mechanisms, electronic..... | 9A992, 9A610.h |
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| Remotely operated vehicles | 1A006.a |
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| Description | ECCN Citation |
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| Resaturated pyrolyzed materials | 1C102 |
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| Resin (thermoset) impregnated continuous materials..... | 1C210.c |
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| Resists (positive), semiconductor lithography | 3C992 |
| Resist material, coated (semiconductor) substrates | 3C002 |
| Resistors, fixed..... | 3A611.y.23 |
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| Restraint devices, law enforcement, including leg irons, shackles, and handcuffs; straight jackets, stun cuffs; shock belts; shock sleeves, multipoint restraint devices, restraint chairs | 0A982 |
| Reticles, integrated circuits of 3A001 | 3B001.g |
| Reticles and designs | 3B991.b.2 |
| Reticle sights | 0A987 |
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| Rheostats | 3A611.y.8 |
| Ricin | 1C351.d.11 |
| Rickettsia prowazekii..... | 1C351.c.17 |
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| Robot end-effectors | 2B007 |
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| Robot controllers..... | 2B007 |
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| Robots, explosive/munitions environment handling..... | 2B007.b |
| Robots, radiation hardened | 2B007.c |
| Robots with real time 3D image processing or scene analysis | 2B207 |
| Robots specially designed for underwater use..... | 8A002.h |
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| Rocket engines, solid propellant | 9A107 |

| Description | ECCN Citation |
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| Rocket motors, hybrid | 9A109 |
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| Rotor assembly mandrels, bellows forming..... | 2B228.a |
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| Rotor forming mandrels, precision | 2B209.b |
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| Ruby lasers..... | 6A995.c |
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| Salvage systems, ocean | 8A001.e |
| Saps | 0A978 |
| SARS-associated coronavirus (SARS-CoV) | 1C351.b.2 |
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| Satellite receivers | 7A005 |
| Satellite receivers, other than those of 7A005 | 7A105 |
| Satellites, commercial communications..... | 9A004 |
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| Saxitoxin | 1C351.d.12 |
| Scanning cameras & systems..... | 6A003.b.2 |
| Scatterometers | 7B002.a |
| Scatterometers, to characterize mirrors for laser gyro equipment | 7B102.a |
| Sclerophthora rayssiae var. zeae | 1C354.b.8 |
| Scramjet engines/components..... | 9A011 |
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| Sealers (semi-automatic or automatic hot cap) for ceramic | |

| Description | ECCN Citation |
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| Seal-less pumps..... | 2B350.i |
| Seals, aircraft/aerospace use | 1A001.a, 9A610.x |
| Seals, made from fluoroelastomers..... | 1A001.c |
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| Seats, seat assemblies, seat supports, and harnesses – for ground vehicles..... | 0A606.y.14 |
| Security equipment, information | 5A002 |
| Security equipment, information, software..... | 5D002 |
| Security imaging equipment | 2A984, 2D984 or 2E984 |
| Security scanning equipment | 2A984, 2D984 or 2E984 |
| Segmented mirrors, assembly in space | 6A004.c.3 |
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| Semiconductor, test equipment..... | 3B002 |
| Semiconductor compound photocathodes | 6A002.a.2.c.3 |
| Semiconductor components, extended temperature range..... | 3A001.a.2 |
| Semiconductor component design software, computer-aided-design | 3D003 |
| Semiconductor device discrete testing equipment..... | 3B992.b.4.a |
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| Semiconductor device or material manufacturing equipment | 3B001 |
| Semiconductor devices manufacturing equipment and systems..... | 3B991.b |
| Semiconductor lasers | 6A005.d.1 |
| Semiconductor materials purifying or processing equipment | 3B991.b.1.b |
| Semiconductor probing systems, electron & laser beam | 3B002.d |
| Sensing devices (electronic) | 6A002.a.2.a.2.b |
| Sensing elements, hydrophone | 6A001.a.2.a |
| Sensing fibers, optical (not controlled by 6A002) | 6C992 |
| Sensor materials, optical | 6C002 |
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| Sensors, industrial infrared | 6A002.a |
| Sensors, linear position feedback unit | 2B008.a |
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| Sensors, multispectral imaging | 6A002.b |
| Sensors, optical | 6A992 |
| Sensors, optical | 6A002 |
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| Sensors, radiation hardened | 6A102 |
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| Seoul virus | 1C351.a.46 |
| Separation mechanisms for missiles | 9A117 |
| Separators, centrifugal (biological)..... | 2B352.c |
| Separators, electromagnetic isotope..... | 1B226 |

| Description | ECCN Citation |
|--|--------------------|
| Servo valves, gel propellant control systems | 9A106.d |
| Shackles | 0A982 |
| Shaft encoders (rotary input type)..... | 3A001.f |
| Shale oil | 1C981 |
| Shaving machines, gear | 2B003 |
| Sheep pox virus..... | 1C351.a.47 |
| Shields, police | 0A979 |
| Shiga toxin | 1C351.d.13 |
| Shiga-like ribosome inactivating proteins other than verotoxin | 1C351.d.17 |
| Shiga toxin producing Escherichia coli (STEC) of serogroups O26, O45, O103, O104, O111,O121, O145, O157, and other shiga toxin producing serogroups | 1C351.c.19 |
| Shigella dysenteriae | 1C351.c.20 |
| Ship vessel positioning systems, acoustic..... | 6A001.a.1.d |
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| Shock belts | 0A982 |
| Shock shields | 0A985 |
| Shock sleeves | 0A982 |
| Shock tubes | 1C608.b or 1C992.c |
| Shoes, protective | 1A004 or 1A995 |
| Shortwave radio technology | 5E001.c.4.c |
| Shotgun shells | 0A986 |
| Shotgun shell manufacturing equipment | 0B986 |
| Shotgun shells, buckshot..... and shotgun shells, technology for the development or production of | 0A984 0E984 |
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| Side Scan Sonar & Synthetic Aperture Sonar (SAS) designed for seabed imaging... 6A001.a.1.a.3 | 6A001.a.1.a.3 |
| Sidelooking airborne radar (SLAR)..... | 6A008.d |
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| Signal processing equipment | 4A994.f |
| Signal processing equipment, general purpose digital..... | 4A003 |
| Signal processing equipment, hydrophone arrays | 6A001.a.2.c |
| Signal tracking development/use technology, laser..... | 5E001.b.2 |

| Description | ECCN Citation |
|---|--------------------|
| Signature suppression devices, treatments & fittings | 1C001 |
| Signature (electromagnetic) reduction devices..... | 1C001 |
| Signature (electromagnetic) reduction devices..... | 1A101 |
| Signature suppression devices, treatments & fittings | 1A101 |
| Silahydrocarbon oils | 1C006.a.1 |
| Silicon carbide (SiC) substrate blanks | 6C004.d |
| Silicon, hetero-epitaxial grown multi-layer substrates | 3C001.a |
| Silicon microcircuits | 3A001.a |
| Silicone carbide wafers | 3C005 |
| Silicon-on-sapphire integrated circuits | 3A001.a Note 2 |
| Silicone fluid, fluorinated | 1C006.b.2 |
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| Silylated resists for semiconductor lithography..... | 3C002.d |
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| Single crystal casting control software | 9D004.c |
| Single crystal casting equipment | 9B001.a, 9B619 |
| Single crystals | 6C002.b |
| Single mode optical fiber & cable | 5A991 |
| Single point diamond turning techniques, technology..... | 6E003.d.2 |
| Single-element & focal plane arrays, space-qualified | 6A002.e |
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| Slapper detonators (Electric)..... | 1A007 or 3A232.a.3 |
| Slurry propellant control systems | 9A106.d |
| Smoke bombs | 1A984 |
| Smoke detector for military aircraft..... | 9A610.y.27 |
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| Sodium bifluoride | 1C350.d.16 |
| Sodium cyanide..... | 1C350.d.17 |
| Sodium fluoride | 1C350.d.18 |
| Sodium (Na) metal vapor lasers..... | 6A005.b |
| Sodium sulphide..... | 1C350.d.19 |
| <i>Software, see product group D for controls in each category</i> | |
| Software, adaptive control | 2D002.b.2 |
| Software, adaptive control | 2D992.a |
| Software, dedicated, for toxic gas monitoring systems and their dedicated detecting components controlled by 2B351 | 2D351 |
| Software, electronic devices | 2D002 |
| Software, for coordinating function of multiple subsystems for use in missiles | 9D105 |

| Description | ECCN Citation |
|--|--------------------|
| Software, for potable electric generator development or production | 2D994 |
| Software for Nuclear materials, facilities and equipment..... | 0D001 |
| Software, numerical control..... | 2D002 and 2D003 |
| Software, real time processing in machine tools | 2D002.b |
| Software, real time processing equipment operating systems | 4D993.c |
| Software, recovery of source code..... | 5D001.c.2 |
| “Software” specially designed or modified for the “development”, “production” or “use” of equipment controlled by 2A983 | 2D983 |
| “Software” “specially designed” for ground vehicles and related commodities controlled by 0A606, 0B606, or 0C606 | 0D606 |
| “Software” “specially designed” for commodities controlled by 0A617, “equipment” controlled by 0B617, or materials controlled by 0C617 | 0D617 |
| “Software” specially designed for the “development” of the equipment controlled by 3A003..... | 3D004 |
| “Software” “specially designed” for the “development,” “production,” operation, failure analysis or anomaly resolution of commodities controlled by 9A515.d | 9D515.d |
| “Software” “specially designed” for the “development,” “production,” operation, failure analysis or anomaly resolution of commodities controlled by 9A515.e | 9E515.e |
| Solar cells, cell-interconnect-coverglass (CIC) assemblies, solar panels, and solar arrays (space qualified) | 3A001.e.4 or 3A991 |
| Solenoids..... | 3A611.y.10 |
| Solenoids, superconductive..... | 3A001.e.3 |
| Solenoids, superconductive | 3A201.b |
| Solid propellant rocket engines..... | 9A107 |
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| Solid rocket propulsion system, components..... | 9A108 |
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| Solid state joining equipment, tools/dies/fixtures | 9B004 |
| Solid state imaging devices..... | 6A203.b.3 |
| Solid-state imaging devices | 6A002 |
| Solid-state pulsed power switching thyristor devices and thyristor modules | 3A001.g |
| Solid state lasers, tunable | 6A005.c |
| Solid state microwave amplifiers..... | 3A001.b.4 |
| Solid-state power semiconductor switches, diodes, or 'modules' | 3A001.h |
| Sonar, active individual | 6A001.a.1.e |
| Sonar processing equipment | 6A001.a.2.b |
| Sonar log equipment | 6A001.b |
| Sonar, Side Scan Sonar (SSS) designed for seabed imaging | 6A001.a.1.a.3 |
| Sonar, Synthetic Aperture Sonar (SAS) designed for seabed imaging..... | 6A001.a.1.a.3 |
| Sonar, underwater navigation system | 7A008 |

| Description | ECCN Citation |
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| Sonar signal processing equipment..... | 6A001.a.1.d Note a |
| SONET (Synchronous Optical Network) technology..... | 5E001.b.4 |
| SONET (Synchronous Optical Network) technology..... | 5E991.a.2 |
| Sounding rocket use software | 9D101 |
| Sounding rockets..... | 9A104 |
| Source code automatic generation software | 4D993.b |
| Source code, development of avionic goods as specified..... | 7D004 |
| Source code recovery software | 5D001.c.2 |
| Spacecraft..... | 9A515 |
| Spacecraft buses..... | 9A515 |
| Spacecraft on-board systems..... | 9A515 |
| Spacecraft payloads | 9A515 |
| Space launch vehicles | 9A515 |
| Space probes | 9A004 |
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| Space qualified or radiation hardened photovoltaic arrays..... | 3A001.e.1.c |
| Space-qualified solid state detectors..... | 6A002.a.1 |
| Space-qualified optical components | 6A004.c |
| Spacecraft and related commodities | 9A004 or 9A515 |
| Spacecraft components | 9A515 or 9A010 |
| Spacecraft inertial navigation equipment/components | 7A003 |
| Spark-gaps, triggered | 3A228.b |
| Speakers | 3A611.y.11 |
| Spectrometry analytical instruments..... | 3A999.f |
| Spherical or spheroidal aluminum powder | 1C111.a.1 |
| Spiked batons | 0A983 |
| Spin forming machines | 2B009 |
| Spin forming machines | 2B209 |
| Spin forming machines | 2B999I |
| Spin forming machines capable of flow-forming functions | 2B209 |
| Spin forming machines combining spin-forming and flow-forming function..... | 2B009 |
| Spindle assemblies | 2B998.a |
| Spindle assemblies, machine tools..... | 2B008.c |
| Spray booms or arrays of aerosol generating units, specially designed for fitting to aircraft, lighter than air vehicles,” or “UAVs”..... | 2B352.i.2 |
| Spray cooling thermal management systems..... | 3A003 |
| Spray-drying equipment capable of drying toxins or pathogenic microorganisms | 2B352.f |
| Spraying or fogging systems, specially designed for fitting to aircraft, “lighter than air vehicles,” or “UAVs” | 2B352.i.1 |
| Spraying production equipment, plasma with controlled atmosphere..... | 2B005.d |
| Spread spectrum development technology techniques | 5E001.b.4 |

| Description | ECCN Citation |
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| Spread spectrum radio equipment..... | 5A001.b.3 |
| Spread spectrum spreading code generation..... | 5A002.a.5 |
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| Sputter deposition production equipment | 2B005.e |
| Sputtering equipment, magnetically enhanced | 3B991.b.1.f |
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| Staging mechanisms for missiles | 9A117 |
| Stainless steel plate | 1C999.b |
| Staphylococcus aureus enterotoxins, hemolysin alpha toxin, and toxic shock syndrome toxin (formerly known as Staphylococcus enterotoxin F) | 1C351.d.14 |
| 'Star trackers' and components therefor | 7A004 |
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| Steam sterilizable freeze drying equipment | 2B352.e |
| Steel, maraging | 1C216 |
| Steel, maraging | 1C116 |
| Steel, Titanium-stabilized duplex stainless (Ti-DSS) | 1C118 |
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| Stealth materials, coatings and treatments for signature suppression | 0C617.a |
| Step & repeat equipment, semiconductor wafer processing | 3B001.f.1 |
| Stirling cycle engine, air independent..... | 8A002.j.4 |
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| Storage tanks, chemical (capacity greater than 100 L) | 2B350.c |
| Stored program controlled (SPC) switching equipment | 5A991.c |
| Stored program controlled (SPC) switching equipment, equipment for the development of equipment employing | 5B001.b |
| Stored program controlled (SPC) switching equipment, software for the development of equipment employing | 5D001.d |
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| Stored program controlled equipment controlled by 3B, software for use of | 3D002 |
| Stored program controlled crystal pullers | 3B991.b.1.c.2 |
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| Strap down/gimbal inertial navigation systems or equipment | 7A003 |
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| Streak cameras, mechanical or electronic | 6A003.a.3 |
| Streak tubes, electronic streak cameras | 6A203.b.1 |
| Streak cameras, electronic type..... | 6A203.b.1 |
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| Description | ECCN Citation |
|---|---------------------------|
| Stroboscopic light systems..... | 8A992.c |
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| Structures and composite structures, laminate, and manufacturers for missiles..... | 9A110 |
| Stun guns..... | 0A985 |
| Stun cuffs | 0A982 |
| Submarine diesel engines..... | 8A620.d |
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| Submarine vessel positioning systems, acoustic..... | 6A001.a.1.d |
| Submersible systems | 8A992.e |
| Submersible vessels, cargo and transport | 8A620 |
| Submersible vessels, military..... | 8A620 |
| Submersible vessels, oceanographic and associated commodities | 8A620 |
| Submersible vehicles operation software (unmanned) | 8D999 |
| Submersible vehicles/vehicle systems, equipment, or components (non-military) | 8A002.a |
| Submersible vehicles/vehicle systems or equipment (non-military) | 8A001 |
| Substrate development/production technology, diamond film | 3E003.d |
| Substrates, for X-ray masks | 3B991.b.2.b.2 |
| Substrates, hard surface coated | 3B991.b.2.b.1 |
| Substrates, multi-layer hetero-epitaxial materials..... | 3C001 |
| Substrates, semiconductor with resist coating | 3C002 |
| Substrates with at least one epitaxial layer of silicon carbide, gallium nitride, aluminum nitride or aluminum gallium nitride | 3C006 |
| Suits, protective..... | 1A004, 1A995 or 2B352.f.1 |
| Sulphur dichloride..... | 1C350.c.7 |
| Sulphur monochloride..... | 1C350.c.6 |
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| Superconductive electromagnetic sensors | 6A996.b |
| Superconductive electromagnets or solenoids | 3A201.b |
| Superconductive electromagnets or solenoids | 3A001.e.3 |
| Superconductive devices or circuits..... | 3A001.d |
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| Superconductive electronic device technology..... | 3E003.c |
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| Superplastic forming tools, dies, molds or fixtures | 1B003 |

| Description | ECCN Citation |
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| Technology, development of frequency hopping techniques | 5E001.b.4 |
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| Technology, “development,” “production,” or “use” of “software” controlled by ECCN 3D201 or 3D202..... | 3E202 |
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| “Technology” “required” for the “development,” “production,” failure analysis or anomaly resolution of commodities controlled by 9A515.e | 9E515.e |

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| Technology, tilt rotor/wing power transfer systems development..... | 9E003.d, 9E610.a |
| Technology, vacuum microelectronic device | 3E003.a |
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| Telecommunications equipment, parts, components for a military application | 5A611, 3A611 |
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| Television cameras, underwater..... | 8A002.d.1 |
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| Television systems (camera, lights, monitoring and signal transmission equipment), remote operation with submersible vehicle | 8A992.a.1 |
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| Description | ECCN Citation |
|--|------------------------------|
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| Description | ECCN Citation |
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| Description | ECCN Citation |
|---|------------------|
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| Underwater camera equipment, n.e.s..... | 8A992.d |
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| Underwater electric field sensors..... | 6A006.b |
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| Underwater propulsion equipment..... | 8A992.j |
| Underwater rebreathing apparatus | 8A620.f |
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| Unmanned untethered submersible vehicles..... | 8A001.d |
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| Description | ECCN Citation |
|--|---------------------|
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| Valves, bellows seal..... | 2A226 |
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| Vehicles, "specially designed" for a military use | 0A606.a |
| Vehicles, unarmed, off-road, and armored | 0A606.b.1 |
| Velocity interferometers (VISARs) | 6A225 |
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| Description | ECCN Citation |
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| Description | ECCN Citation |
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| Windows (ground vehicle), except those for armored vehicles | 0A606.y.16 |
| Windshield water and wiper systems for military aircraft..... | 9A610.y.22 |
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| Wing folding system technology | 9E003.j |
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| Zinc germanium diphosphide | 6C004.b.4 |
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| Zoonotic pathogens and “toxins” | 1C351 |

Description**ECCN Citation**

Note: Prior to October 15, 2013, the CCL contained certain ECCNs that were only included as cross references to items subject to the export control regulations administered by the Nuclear Regulatory Commission. ECCNs formerly listed on the CCL that, as of October 15, 2013 were subject to the export licensing authority of the Nuclear Regulatory Commission at 10 CFR part 110 are: 0A001, 0B001, 0B002, 0B003, 0B004, 0B005, 0B006, 0C001, 0C002, 0C004, 0C005, 0C006, 0C201 and 1C012. See Section § 774.1(b) for additional information.